

The National Practitioner Data Bank: the First 4 Years

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Synopsis

The National Practitioner Data Bank became operational September 1, 1990, as a flagging system to identify health care practitioners who may have been involved in incidents of medical incompetence. Query volumes have grown substantially over the Data Bank's first 4 years of operation. The greatest increase has come in the number of voluntary queries. By the end of 1994, the Data Bank had processed more than 4.5 million requests for information on practitioners, more than 1.5 million of which were received in 1994 alone.

The proportion of queries for which the Data Bank contains information on the practitioner in question has grown as the Data Bank has come to contain more reports. During 1994, 7.9 percent of queries were matched. The Data Bank contained more than 97,500 reports at the end of 1994. More than 82 percent of the reports concerned malpractice payments. Licensure reports made up the bulk of the rest. Physicians predominate in reports, accounting for slightly more than 76 percent of the total. The remainder are related to dentists (16 percent) and all other types of practitioners (8 percent). Since reporting of adverse actions is mandatory only for physicians and dentists, the proportion of reports attributable to these types of practitioners is higher than it would be if adverse action reporting requirements were uniform for all practitioners.

State malpractice payment rates and adverse action rates vary widely, but a State's rate in any given year is highly correlated with its rate in any other year. State malpractice rates are not strongly correlated with adverse action rates, neither are the rates for physicians strongly correlated with those for dentists. There is a weak tendency for States with smaller physician populations to have higher levels of licensure and privileging actions.

PATIENTS SUFFER IN TWO WAYS because of medical incompetence. They not only have higher risks and poorer outcomes than would otherwise be expected, they also have to pay more for care because even competent physicians have to bear higher liability costs and the costs of practicing defensive medicine.

The National Practitioner Data Bank has been collecting information on the extent of alleged medical incompetence (defined to include professional misconduct), as reflected in both malpractice payments made on behalf of practitioners and disciplinary actions taken against them, since September 1, 1990. Interest in this information and in the Data Bank has been heightened by State and national legal reform efforts, including proposals to cap malpractice awards or otherwise limit malpractice claims. The emphasis on consumer choice in health care reform and proposals to make some information from the Data

Bank available to the public have also led to increased interest in the Data Bank program.

In this article we describe the Data Bank's current operation and report on alleged medical incompetence and misconduct as reflected in the Data Bank's experience through the end of 1994. The Data Bank program is administered by the Division of Quality Assurance, Bureau of Health Professions, Health Resources and Services Administration, Public Health Service. The information presented updates our first report published in the Journal of the American Medical Association in 1992 (1).

Background

Health Care Quality Improvement Act. The Data Bank was established under Title IV, Part B of the Health Care Quality Improvement Act of 1986

Table 1. Number, percent, and percent change of queries accepted for processing, and matched queries, by year, National Practitioner Data Bank, 1991-94 and cumulative totals

Queries	1991	1992	1993	1994	Cumulative
Self	4,182	17,060	24,890	31,084	77,169
Single name	170,742	222,092	205,806	131,669	755,608
Multiple name	634,976	638,435	914,564	1,342,071	3,753,485
Totals	809,900	877,587	1,145,260	1,504,824	4,586,262
Percent change	8.4	30.5	31.4	
Matched	10,983	43,234	68,359	118,840	241,475
Percent	1.4	4.9	6.0	7.9	5.3

(HCQIA), P.L. 99-660, to collect and disseminate to authorized professional review authorities information concerning medical incompetence. Under the terms of the act, malpractice insurers must report to the Data Bank all payments made on behalf of individual practitioners. State licensing boards, hospitals, and other health care entities, including professional societies, also must report to the Data Bank certain adverse licensing and disciplinary actions taken against individual practitioners (2).

This information is made available from the Data Bank in response to inquiries from licensing boards and credentialing authorities. The HCQIA requires hospitals to query the Data Bank concerning all new staff appointments of physicians, dentists, and other practitioners and to query concerning their entire medical staff at least once every 2 years. Other health care entities, such as health maintenance organizations (HMOs) or medical or dental group practices, may query the Data Bank if they have adopted a formal peer review process. State medical and dental boards may also query the Data Bank, as may individual practitioners who wish to obtain a copy of their own record.

The Data Bank was designed to be a flagging system that would provide information to licensing or credentialing authorities who would then examine further the records of practitioners. The Data Bank was not designed to be the primary source of information; rather its purpose was to ensure that decision makers have information that might not otherwise be readily available, particularly in the case of incompetent practitioners who move from hospital to hospital or State to State (3).

Impact of opening date on reporting. The Data Bank contains reports of malpractice payments and adverse licensure or disciplinary actions since its September 1, 1990, opening date. The key date for reporting purposes is the date of the malpractice payment or the adverse licensure, privileges, or

membership action, not the date of the incident or the date of the claim. Because of the delay that often occurs between malpractice incidents and the filing of a malpractice claim, and the further (and often much longer) delay between the filing of a claim and the issuance of a payment, the Data Bank contains many reports concerning payments for many malpractice events that occurred before it went into operation (4-6).

Delays between incidents and adverse actions tend to be shorter than delays in malpractice cases, but the Data Bank also includes reports on some incidents that occurred before the opening of the Data Bank that resulted in adverse actions being taken after the Data Bank's opening. Even so, for all but the newest practitioners, the Data Bank records will only be relevant to the most recent part of a practitioner's career. Thus it will be several years before the Data Bank will reach its ultimate potential as a flagging tool. In the meantime, the Data Bank becomes more valuable to querying entities with each additional year of information it receives.

Although taxpayer funds covered development and startup costs, the Data Bank currently is funded entirely by user fees.

Limitations of Data Bank information. Data Bank information should be interpreted with caution. Although by law the Data Bank is to receive data on every malpractice payment made in the United States on behalf of individual practitioners, except those made solely by practitioners using their personal funds, and although the reporting is believed to be reasonably complete, the malpractice payments recorded in the Data Bank do not necessarily constitute a comprehensive and definitive reflection of actual medical incompetence.

Less than 2 percent of injuries caused by medical negligence in the hospital setting lead to malpractice claims, let alone payments. On the other hand, claims are sometimes filed in situations in which there was

no medical negligence (7-9). In any event, a majority of claims do not lead to payments. A study of claims filed with one insurer found that payments were made for only 43 percent of claims filed, and 21 percent of the payments made were for claims that were considered clearly defensible by the insurer (10). Thus there are both episodes of medical incompetence that are not reflected in malpractice payments and malpractice payments that do not reflect episodes of medical incompetence.

Since the Data Bank serves only as a *flagging* system, the mere existence of a report in the Data Bank should not be taken by professional reviewers to mean that a practitioner has performed incompetently. Malpractice insurers are encouraged to indicate whether or not the standard of care was met when they report a malpractice payment. In addition, since practitioners may dispute the factual accuracy of a report to the Data Bank and submit their own statement explaining a report, queriers should receive adequate information to recognize payments made only for the "convenience" of an insurer or other questionable payments. Queriers can then determine the significance of these payments.

Use of Data Bank for research. Despite the fact that malpractice payments do not always reflect medical incompetence, the Data Bank's malpractice payment data have advantages for research. The Data Bank has the only comprehensive national malpractice payment data set. The data can be used to describe almost all malpractice payments made on behalf of practitioners in the nation as a whole and in each geographic area. This has important implications for physicians, insurers, and legislators as they assess medical liability issues. State legislators, for example, might want to compare the pattern of malpractice payments in their State with neighboring States or States considered to have model malpractice statutes. Physicians might use the data to target quality assurance activities.

Because of their uniquely comprehensive nature, the Data Bank malpractice payment data are also attractive for use, albeit with caution, in studies assessing the underlying extent of medical incompetence. All the other data sources, such as claims to individual insurers, all claims reported to particular States, or comprehensive medical records reviews, suffer from their own different but significant limitations. Claims data are geographically limited or are limited to physicians who have sought coverage from a particular firm and met that firm's underwriting standards. Medical records reviews are extremely expensive. The validity of the assumptions necessary

to make the leap from payments to incompetence, such as the consistency of the relationship between negligent medical injury, claims filed, and claims paid from year to year, State to State, and specialty to specialty, would be fruitful subjects for further research, and the results of this research would assist later researchers in making better use of the bank's data.

The second type of information in the Data Bank, medical disciplinary reports, also must be used with caution in assessments of medical incompetence. The law requires that the Data Bank receive reports on (a) every adverse State licensure action based on professional conduct or competence that could affect the health or welfare of patients, (b) certain hospital disciplinary actions, and (c) the rare instances of professional society membership actions. However, the frequency with which licensure boards, hospitals, and professional societies take reportable actions appears to vary widely. It is doubtful that the full extent of this variation reflects underlying variation in medical competence of physicians and other practitioners from facility to facility or State to State. The extent to which the variation in reports reflects the actual variation in underlying medical incompetence would be another fruitful area for research. Until this research can be done, the fact that the Data Bank is the only comprehensive national source for these types of data makes the data attractive for professional review and aggregate analysis, even if caution is in order.

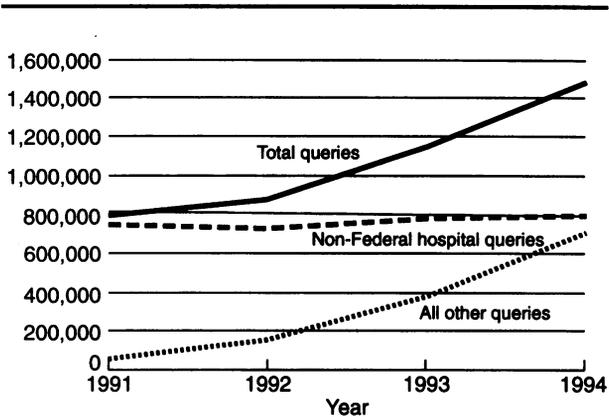
Data Bank Operation Through 1994

The primary purpose of the Data Bank is to receive and disseminate information on medical incompetence of individual practitioners. This activity is reflected in reports, queries, and queries matched with reports on individual practitioners.

Queries. By the end of 1994, 4,586,262 queries had been processed in the Data Bank, as shown in table 1. Queries during 1994 totaled 1,504,842, or about 6,000 queries per working day. This was a 31.4-percent increase over the previous year's 1,145,260 queries and an 85.8-percent increase over the 809,900 queries during 1991, the Data Bank's first full calendar year of operation.

The continuing and substantial increase in query volume throughout the first 4 years is one indication that queriers are increasingly finding the Data Bank reports useful in their decision making. Another indication is the observed increase in query volume by entities that are not *required* to query. Only

Growth in queries, by type, National Practitioner Data Bank, 1991-94



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hospitals are required to query, and even then they must do so only for new applicants for privileges or staff appointment and once every 2 years concerning their entire staffs. Hospitals voluntarily may query for other professional review activities. Hospitals made 92.6 percent of all queries to the Data Bank during 1991. Although the actual number of hospital queries has increased slightly from 1991 to 1994, because of the much greater increase in the number of queries submitted voluntarily by other types of entities, hospital queries represented only 52.8 percent of all new queries during 1994.

The trend of voluntary queries as a fraction of total queries is clearly upward, as shown in the chart. Of the voluntary queriers, HMOs were the most active, representing 29.8 percent of all queries in 1994. This was a substantial increase over the 8.6 percent of queries made by HMOs during the Data Bank's first 3 years. Indeed, 59 percent of all HMO queries from the opening of the Data Bank through the end of 1994 were made during 1994.

Preferred provider organizations, group practices, and other similar entities made 7.8 percent of all queries during the entire period, but during 1994, queries by these entities constituted 13.4 percent of

incoming queries. Queries by these entities during 1994 represent 58.8 percent of the total of their queries over the Data Bank's 52 months of operation. State licensing boards made 0.9 percent of all queries and professional societies 0.3 percent both over the Data Bank's life and during 1994. The actual numbers of State licensing board and professional society queries were substantially higher during 1994 even though their percentages of all queries were essentially unchanged, because the total number of queries increased substantially. The rapid increase in voluntary querying seems indicative of the growing perceived utility of Data Bank information.

Matches. One reason that queriers may find information from the Data Bank increasingly useful is that queries are increasingly more likely to result in a match (table 1). By the end of 1994, more than 241,000 matches involving more than 46,000 individual practitioners had been made. In 1994, 7.9 percent (almost 1 in 12 queries) resulted in a match, compared with only 1.4 percent in 1991. As more reports are added to the Data Bank, the match rate should continue to increase, making the Data Bank's utility as a flagging system even greater and encouraging even more voluntary queries.

Reports. Although query volume will in part vary by the perceived usefulness of responses received from the Data Bank, report volume is dependent on the number of malpractice payments made and the number of reportable adverse actions taken. In general, if there are more malpractice payments made or more adverse actions taken, the number of reports will go up; if there are fewer, the number of reports will go down.

During 1991, the Data Bank received 22,517 reports. In 1992, 24,621 reports were received, an increase of 9.3 percent. During 1993, there was a 1.2-percent decrease to 24,334 reports, and in 1994, there was a 13.8-percent increase to 25,262. Part of the increase from 1991 to 1992 is undoubtedly the result of incomplete reporting during the Data Bank's start-up period. The changes in later years may represent a random year-to-year variation. By the end of 1994, the Data Bank contained 97,537 reports.

Malpractice payment reports. Most reports in the Data Bank concern malpractice payments. At the end of 1994, the Data Bank contained 80,559 malpractice payment reports, representing 82.6 percent of all reports in the Data Bank. The rest were adverse action reports. There has been little year-to-year variation in the distribution of reports between

Table 2. Number, percent distribution, and percent change of malpractice payment reports by practitioner type, National Practitioner Data Bank, 1991-94 and cumulative totals

Year	Physicians		Dentists		All others		Totals	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1991.....	13,826	73.5	2,862	15.2	2,123	11.3	18,811	100.0
1992.....	15,109	73.6	3,373	16.4	2,036	9.9	20,518	100.0
Percent change 1991-92.....	...	9.3	...	17.9	...	-4.1	...	9.1
1993.....	14,860	74.5	3,093	15.5	1,981	9.9	19,934	100.0
Percent change 1992-93.....	...	-1.6	...	-8.3	...	-2.7	...	-2.8
1994.....	15,550	76.7	3,003	14.8	1,713	8.5	20,266	100.0
Percent change 1993-94.....	...	4.6	...	-2.9	...	-13.5	...	1.7
Cumulative totals.....	60,166	74.7	12,540	15.6	7,853	9.7	80,559	100.0

malpractice payments and adverse actions.

Most malpractice payment reports (74.7 percent) in the Data Bank concern physicians. Remaining reports related to dentists (15.6 percent) and all other types of practitioners (9.7 percent). Over the years, there has been a small increase in the proportion of all reports related to physicians, rising from 73.5 percent in 1991 to 76.7 percent in 1994 (table 2).

Malpractice payment reporting thresholds. Some groups have recommended that a dollar threshold for reporting malpractice payments to the Data Bank be established. Small payments, they argue, are more likely to be nuisance suits and not represent actual malpractice. Others argue that collection of reports on all malpractice payments helps fulfill the comprehensive flagging purpose for which the Data Bank was established and that a dollar threshold would undermine the usefulness of the Data Bank as a comprehensive source of malpractice information. In addition, some argue that a threshold would not equitably affect practitioners with different specialties or practitioner types since some specialties (psychiatry, for example) are much more likely to have only small malpractice payments than are practitioners in other specialties (surgery, for example) (11-14). Similarly, payments for dentists are typically lower than payments for physicians.

Threshold opponents also argue that a reporting threshold would skew malpractice payments and perhaps even make it more likely that practitioners will be sued, because potential plaintiffs and attorneys would know that some practitioners would encourage a payment under the threshold regardless of the merit of a claim to avoid the possibility that a jury might award a reportable payment.

Analysis of Data Bank malpractice payment reports from States with reporting thresholds provides one way of objectively examining the impact of thresholds. We examined California malpractice payments

reported between the Data Bank's opening and June 30, 1994. California has a \$30,000 reporting threshold for malpractice payments. Malpractice payments lower than \$30,000 represented 58.4 percent of all payments in California during the period. Payments for \$29,999 amounted to 6.3 percent of all payments. Nationally but excluding California, 38.4 percent of all payments were less than \$30,000; almost no payments were for exactly \$29,999. We know of no other explanation beyond the mere existence of a reporting threshold for the clustering of payments immediately below the threshold amount in California. A similar clustering of payments just below a State reporting threshold was observed in Data Bank reports for other States with thresholds.

Adverse action reports. At the end of 1994, there were 16,978 reported adverse actions in the Data Bank, representing 17.4 percent of all reports. It should be noted, however, that slightly more than 6.6 percent of these reports were for such things as licensure reinstatement, restoration of privileges, reductions of previous disciplinary actions, and so on, and were not actually adverse to the practitioner involved.

There are three types of adverse action reports—adverse licensure actions taken by State boards, adverse clinical privileges actions taken by hospitals and other health care entities, and adverse actions taken by professional societies concerning membership.

Reports of adverse licensure actions predominate. By the end of 1994, the Data Bank had received 12,631 licensure reports, representing 74.4 percent of all adverse action reports. There were only 4,160 clinical privileges reports (24.5 percent of adverse action reports) and 187 professional society membership reports (1.1 percent of adverse action reports). The percentage of all adverse action reports represented by professional society membership reports

Table 3. Number, percent distribution, and percent change of reportable actions¹ by practitioner type, National Practitioner Data Bank, 1991–94 and cumulative totals

Report and practitioner	1991		1992		Percent change 1991–92	1993		Percent change 1992–93	1994		Percent change 1993–94	Cumulative	
	Number	Percent	Number	Percent		Number	Percent		Number	Percent		Number	Percent
Licensure	2,627	70.9	2,965	72.3	12.9	3,209	72.9	8.2	3,906	78.2	21.7	12,631	74.4
Physicians	2,042	55.1	2,268	55.3	11.1	2,508	57.0	10.6	3,188	63.8	27.1	9,940	58.5
Dentists	585	15.8	697	17.0	19.1	699	15.9	0.3	712	14.3	1.9	2,683	15.8
Others	0	0.0	0	0.0	100.0	2	0.0	100.0	6	0.1	100.0	8	0.0
Clinical privileges....	1,043	28.1	1,089	26.5	4.4	1,133	25.8	4.0	1,047	21.0	-7.6	4,160	24.5
Physicians	990	26.7	1,044	25.4	5.5	1,089	24.8	4.3	1,000	20.0	-8.2	4,013	23.6
Dentists	18	0.5	19	0.5	5.6	22	0.5	15.8	18	0.4	-18.2	77	0.5
Others	35	0.9	26	0.6	-25.7	22	0.5	-15.4	29	0.6	31.8	70	0.4
Professional society membership	36	1.0	49	1.2	36.1	58	1.3	18.4	43	0.9	-25.9	187	1.1
Physicians	34	0.9	48	1.2	41.2	52	1.2	8.3	35	0.7	-32.7	169	1.0
Dentists	2	0.1	1	0.0	-50.0	6	0.1	500.0	6	0.1	0.0	16	0.1
Others	0	0.0	0	0.0	0.0	0	0.0	0.0	2	0.0	0.0	2	0.0
Totals	3,706	100.0	4,103	100.0	10.7	4,400	100.0	7.2	4,996	100.0	13.5	16,978	100.0

¹Reportable actions include true adverse actions (for example, revocations, probations, suspensions, reprimands, and so on) as well as nonadverse actions

reported as adverse actions (for example, restorations and reinstatements).

has remained relatively stable over the Data Bank's life, but the percentage of licensure reports has steadily increased from 70.9 percent in 1991 to 78.2 percent in 1994. The percentage of clinical privileges reports declined over the period from 28.1 percent in 1991 to 21.0 percent in 1994.

Unlike malpractice payments, not all adverse actions are reported to the Data Bank. Although all adverse licensure and professional society membership actions based on professional competence or conduct must be reported, hospitals and other eligible health care entities must report only professional review actions based on a physician's or dentist's professional competence or professional conduct that adversely affects his or her clinical privileges for a period of more than 30 days. Undoubtedly, the law's 30-day reporting threshold has an impact on the utility of the Data Bank as a flagging system.

The Data Bank does not have information concerning the extent to which hospitals and other entities take disciplinary actions lasting 30 days or less or whether the existence of the Data Bank's more than 30 days requirement has skewed actions taken by hospitals and other entities. Clearly, hospitals and other entities have taken reportable actions far less frequently than State licensure boards since the opening of the Data Bank. In addition, most professional societies never or rarely report professional review actions affecting the membership of a practitioner.

As with malpractice payments, physicians also predominate in adverse action reports. At the end of 1994, they were responsible for 78.7 percent of the

reported licensure actions, 96.5 percent of reported clinical privileges actions, and 90.4 percent of the reported professional society membership actions. Not surprisingly, physicians rank especially high in the clinical privileges category, since many dentists do not have hospital affiliations and thus cannot have a clinical privileges action taken against them. Dentists represented 21.2 percent of licensure actions, but only 1.9 percent of clinical privileges actions and 8.6 percent of professional society membership actions.

The HCQIA does not provide for reporting of licensure actions taken against practitioners other than physicians and dentists. Clinical privileges and professional society membership actions concerning other practitioners may be voluntarily reported. By the end of 1994, there were only two membership actions reported for practitioners other than physicians and dentists, but 1.7 percent of reported clinical privileges actions concerned these practitioners (table 3).

Practitioners with multiple reports. Another reports-related issue of interest concerns practitioners with multiple reports in the Data Bank. This is of particular interest with regard to proposals—such as that of Rep. Ron Wyden of Oregon and Rep. Scott Klug of Wisconsin—to open to the public Data Bank records of practitioners with multiple reports. At the end of 1994, the mean number of disclosable reports per practitioner was 1.3. Several practitioners had more than 100 reports. Of the 72,931 practitioners with disclosable reports, 84.7 percent had only malpractice payment reports, 12.5 percent had only reportable action reports, and 2.8 percent had at least

one malpractice payment report and one or more reportable action reports.

Approximately 16.7 percent of practitioners in the Data Bank with a malpractice payment report had more than one such report; 12.4 percent had two malpractice payment reports, and 4.2 percent had three or more malpractice payment reports. About 33.9 percent of all malpractice payment reports in the Data Bank concern practitioners with more than one such report.

On occasion, the Data Bank receives multiple reports concerning the same practitioner and the same incident. This can arise if, for example, more than one malpractice payment was made concerning an incident or if both a malpractice payment and a reportable action result from an incident. Some class action suits against practitioners also might result in multiple reports concerning the same incident. Definitive data on multiple reports arising from a single incident are unavailable because it is impossible to identify all such cases from information currently reported to the Data Bank. It is particularly difficult to identify such cases involving reportable actions. Some single-incident-multiple-report cases can be identified, however, from narrative information in reports.

Of greatest interest are situations in which a practitioner has multiple malpractice payment reports that relate to the same incident. An estimated 2.5 percent of practitioners with at least one malpractice payment report have two or more malpractice payment reports relating to a single incident and no reports relating to other incidents. Considering only the approximately 16.7 percent of practitioners who have at least two malpractice payment reports, an estimated 7.3 percent of practitioners in this group have only malpractice payment reports relating to a single incident.

State Analysis

Cumulative malpractice report data for physicians and dentists by State were examined (table 4). An annualized rate consisting of the mean number of malpractice payments per 1,000 practitioners per year was calculated for each State for both physicians and dentists. The rates for physicians vary from lows of 7.5 in Alabama, 10.6 in Hawaii, and 11.3 in South Carolina to highs of 45.6 in Montana, 41.3 in Michigan, and 40.5 in West Virginia. The national rate was 24.5 malpractice payments per 1,000 physicians per year. Thus, if no physician had more than one malpractice payment each year, on average, payments would be made on behalf of slightly fewer

'The usefulness of the Data Bank seems reflected in the fact that many more queries are received, despite the fee for querying, than would be expected if only queries required by law were being made. Indeed, the number of voluntary queries during 1994 was almost as large as the number of required queries. The usefulness of Data Bank information is also confirmed by the demands from some that Data Bank information be made available to the public.'

than 2.5 percent of physicians each year. Since some physicians do have more than one malpractice payment in a given year, the actual percentage of physicians having a payment in any given year is smaller.

The malpractice payment rate for dentists varies from lows of 6.6 per 1,000 dentists in both South Carolina and Wyoming and 7.2 in Idaho to highs of 61.9 in Utah, 28.8 in California, and 27.7 in Michigan. The national rate was 18.3 reports per 1,000 dentists. State level dental data should be interpreted with particular caution, since data for States with a relatively small number of dentists and with a high dental malpractice payment rate, such as Utah, may be skewed by a large number of payments made on behalf of a single dentist.

One might assume that if variations in State malpractice laws and the legal climates in the States were important determinants of malpractice payment rates, the rates for physicians and dentists would correlate. For example, a State with a low or high physician rate would tend to have a similarly low or high dentist rate. While this is true for some States—Hawaii and South Carolina are examples—in general, there is little correlation between the physician and dentist malpractice rates ($R = 0.33$). Only about 11 percent of the variation in the dental rate may be explained by the variation in the physician rate, and vice versa. This suggests that State malpractice laws and State legal climates either do not have a uniform impact on physician and dental malpractice cases or that variations in malpractice legislation and State legal climates are not the only factors affecting malpractice payment rates.

Table 4. Cumulative number of physician and dentist malpractice payments and annualized rate per 1,000 practitioners, by State, National Practitioner Data Bank, September 1, 1990, through December 31, 1994

State	Physicians			Dentists		
	Number of reports	Number of physicians ¹	Annualized rate	Number of reports	Number of dentists ²	Annualized rate
Alabama.....	209	6,423	7.51	61	1,806	7.79
Alaska.....	66	738	20.64	31	371	19.28
Arizona.....	813	7,545	24.87	177	1,989	20.54
Arkansas.....	302	3,555	19.60	43	1,001	9.91
California.....	6,856	69,462	22.78	2,603	20,888	28.76
Colorado.....	669	7,192	21.47	162	2,482	15.06
Connecticut.....	564	9,707	13.41	204	2,651	17.76
Delaware.....	142	1,368	23.95	28	326	19.82
Florida.....	3,038	27,198	25.78	565	7,184	18.15
Georgia.....	880	11,029	18.41	135	3,207	9.71
Hawaii.....	112	2,439	10.60	31	924	7.74
Idaho.....	119	1,267	21.67	18	577	7.20
Illinois.....	3,048	25,517	27.57	566	8,119	16.09
Indiana.....	925	8,901	23.98	139	2,814	11.40
Iowa.....	464	4,937	21.69	77	1,538	11.55
Kansas.....	647	4,669	31.98	99	1,377	16.59
Kentucky.....	564	6,189	21.03	142	2,130	15.38
Louisiana.....	1,048	8,231	29.38	138	2,026	15.72
Maine.....	157	2,486	14.57	23	594	8.94
Maryland.....	825	15,265	12.47	351	3,758	21.55
Massachusetts.....	1,170	19,705	13.70	294	4,789	14.17
Michigan.....	3,706	20,708	41.30	718	5,985	27.68
Minnesota.....	598	9,448	14.61	144	2,935	11.32
Mississippi.....	383	3,413	25.90	37	1,041	8.20
Missouri.....	1,201	11,501	24.10	209	2,778	17.36
Montana.....	254	1,286	45.58	38	487	18.01
Nebraska.....	240	2,746	20.17	62	1,086	13.17
Nevada.....	278	1,740	36.87	41	566	16.72
New Hampshire.....	237	2,131	25.67	63	674	21.57
New Jersey.....	2,225	20,084	25.57	409	6,449	14.64
New Mexico.....	342	2,828	27.91	49	731	15.47
New York.....	7,770	56,804	31.57	1,224	14,949	18.90
North Carolina.....	918	11,944	17.74	102	2,936	8.02
North Dakota.....	110	1,126	22.54	10	307	7.52
Ohio.....	2,509	23,461	24.68	447	6,135	16.81
Oklahoma.....	450	5,614	18.50	91	1,616	13.00
Oregon.....	433	5,844	17.10	86	2,077	9.56
Pennsylvania.....	4,593	31,406	33.75	860	8,153	24.34
Rhode Island.....	254	2,597	22.57	50	558	20.68
South Carolina.....	269	5,498	11.29	44	1,534	6.62
South Dakota.....	84	1,030	18.82	24	331	16.73
Tennessee.....	689	9,482	16.77	98	2,799	8.08
Texas.....	4,189	30,592	31.60	661	8,785	17.36
Utah.....	387	3,071	29.08	316	1,178	61.90
Vermont.....	123	1,435	19.78	31	329	21.74
Virginia.....	877	12,344	16.40	131	3,548	8.52
Washington.....	930	10,009	21.44	235	3,235	16.76
West Virginia.....	591	3,372	40.45	55	871	14.57
Wisconsin.....	629	9,295	15.62	184	3,126	13.58
Wyoming.....	112	684	37.79	7	244	6.62
Washington, DC.....	204	3,671	12.82	47	765	14.18
Totals.....	58,203	548,987	24.47	12,360	155,994	18.28

¹The number of physicians is an estimate of active physicians and osteopathic physicians by the Bureau of Health Professions, Health Resources and Services Administration, Public Health Service.

²Table 302 in the "USDHHS Factbook Health Personnel, United States," March 1993 is the source for data on the number of dentists.

Table 5. Malpractice and licensure and privileges (LP) reports per 1,000 physicians, by year, type, and work State, National Practitioner Data Bank, 1991-94 and cumulative totals

State	1991		1992		1993		1994		Cumulative totals	
	Malpractice	LP	Malpractice	LP	Malpractice	LP	Malpractice	LP	Malpractice	LP
Alabama	8.87	3.58	7.16	5.29	7.47	6.38	7.63	3.74	7.51	4.53
Alaska	12.20	13.55	31.17	13.55	27.10	10.84	18.97	14.91	20.64	11.88
Arizona	23.06	9.81	26.11	8.08	24.92	12.19	29.95	11.27	24.87	9.45
Arkansas	20.82	4.78	21.38	6.75	20.25	8.72	20.82	4.22	19.60	5.65
California	19.78	4.09	25.24	3.86	25.38	4.43	27.27	5.24	22.78	4.08
Colorado	21.83	13.07	21.41	14.60	24.33	14.60	22.94	19.88	21.47	14.57
Connecticut	12.88	4.22	16.17	3.71	14.22	4.22	13.60	4.84	13.41	4.07
Delaware	21.93	9.50	28.51	3.65	24.85	2.19	27.05	5.85	23.95	4.72
Florida	23.94	7.87	27.02	7.43	28.49	6.80	29.97	7.76	25.78	6.85
Georgia	18.50	9.07	17.14	8.52	19.77	8.61	22.30	9.34	18.41	8.16
Hawaii	8.20	2.05	11.48	3.28	11.48	2.05	14.76	5.33	10.60	2.93
Idaho	18.15	3.95	24.47	6.31	23.68	8.68	26.84	11.05	21.67	6.92
Illinois	26.26	4.55	30.49	4.39	32.10	4.86	28.37	5.72	27.57	4.59
Indiana	24.72	5.50	26.63	4.61	21.91	4.83	27.64	8.20	23.98	5.37
Iowa	24.71	14.58	19.45	9.11	24.51	7.70	22.28	12.76	21.69	10.14
Kansas	27.41	6.00	33.84	6.43	34.05	8.35	41.12	10.71	31.98	7.36
Kentucky	18.26	9.69	22.46	9.37	22.46	14.38	26.50	13.57	21.03	11.11
Louisiana	29.16	8.63	29.77	6.68	34.14	7.78	31.47	7.17	29.38	7.12
Maine	15.29	4.42	12.47	1.61	19.71	8.85	14.08	7.64	14.57	5.20
Maryland	11.07	4.06	13.56	5.44	13.49	7.80	14.61	10.87	12.47	6.46
Massachusetts	13.85	2.18	16.49	2.84	14.82	3.10	13.19	4.97	13.70	3.04
Michigan	40.85	3.24	45.10	5.22	38.29	5.94	49.69	6.57	41.30	4.86
Minnesota	15.77	2.96	16.51	7.51	14.18	7.51	15.35	6.24	14.61	5.57
Mississippi	16.70	13.48	29.59	17.58	29.89	8.20	34.28	15.53	25.90	12.98
Missouri	27.65	7.65	27.39	4.61	22.61	10.87	25.22	8.43	24.10	7.28
Montana	52.88	5.44	52.10	15.55	39.66	6.22	51.32	24.88	45.58	12.02
Nebraska	20.03	8.01	20.03	2.55	18.94	8.38	24.40	5.46	20.17	5.46
Nevada	36.78	10.34	35.06	10.92	39.08	11.49	48.85	12.07	36.87	10.48
New Hampshire	19.24	3.28	19.71	5.16	35.19	3.75	36.13	5.63	25.67	4.12
New Jersey	26.79	7.47	23.80	8.12	29.28	9.06	27.83	6.12	25.57	7.11
New Mexico	29.00	4.60	30.76	3.18	24.40	4.60	35.71	3.89	27.91	3.84
New York	29.66	2.15	34.28	3.27	34.08	4.47	35.90	5.46	31.57	3.59
North Carolina	17.50	2.76	19.42	5.53	20.01	4.77	19.76	1.34	17.74	3.36
North Dakota	0.00	7.99	17.76	16.87	25.75	12.43	29.31	21.31	22.54	13.73
Ohio	25.57	4.77	29.03	7.59	23.61	7.97	25.36	10.95	24.68	7.29
Oklahoma	20.66	8.37	17.63	14.96	22.27	13.36	17.99	13.72	18.50	12.09
Oregon	15.91	9.92	20.02	8.56	19.16	6.50	18.31	10.78	17.10	8.21
Pennsylvania	34.29	2.36	35.31	2.64	35.95	2.93	38.46	3.47	33.75	2.63
Rhode Island	25.41	1.54	22.72	4.24	27.72	7.70	20.41	8.09	22.57	4.98
South Carolina	14.55	8.37	10.55	8.73	14.37	10.37	7.46	9.09	11.29	8.44
South Dakota	21.36	0.97	13.59	1.94	17.48	8.74	30.10	15.53	18.82	6.27
Tennessee	17.40	3.59	15.50	3.59	19.62	3.80	18.46	11.60	16.77	5.21
Texas	32.59	6.50	33.05	7.45	32.43	6.28	35.40	10.69	31.60	7.61
Utah	26.70	3.58	27.35	3.91	35.82	6.19	35.82	6.84	29.08	4.73
Vermont	15.33	4.18	19.51	8.36	20.91	5.57	27.18	10.45	19.78	6.27
Virginia	14.18	6.80	17.26	8.34	18.47	8.02	19.60	7.94	16.40	6.28
Washington	19.98	5.50	20.58	5.50	24.88	11.69	22.08	9.89	21.44	7.52
West Virginia	41.22	14.23	48.34	12.16	37.37	16.31	43.00	20.46	40.45	14.92
Wisconsin	20.66	5.92	19.80	4.20	13.77	5.59	12.80	6.24	15.62	5.04
Wyoming	26.32	2.92	38.01	7.31	30.70	8.77	68.71	14.62	37.79	7.42
Washington, DC	14.98	5.99	13.89	22.88	10.35	16.89	14.98	22.06	12.82	15.72
U.S. mean	23.87	5.21	26.21	5.83	26.13	6.51	27.60	7.58	24.47	5.79

Table 6. Cumulative disclosable physician licensure and privileges reports, by type and work State, National Practitioner Data Bank, September 1, 1990, through December 31, 1994

State	Number of physicians	Licensure	Annualized rate per 1,000	Rank ¹	Privileges	Annualized rate per 1,000	Rank ¹
Alabama.....	6,423	91	3.27	15	35	1.26	11
Alaska.....	738	31	9.69	46	7	2.19	34
Arizona.....	7,545	176	5.38	33	133	4.07	49
Arkansas.....	3,555	57	3.70	20	30	1.95	31
California.....	69,462	730	2.43	9	499	1.66	23
Colorado.....	7,192	346	11.10	49	108	3.47	48
Connecticut.....	9,707	139	3.30	16	32	0.76	1
Delaware.....	1,368	13	2.19	6	15	2.53	41
Florida.....	27,198	588	4.99	29	219	1.86	29
Georgia.....	11,029	277	5.80	37	113	2.36	36
Hawaii.....	2,439	22	2.08	3	9	0.85	2
Idaho.....	1,267	30	5.46	36	8	1.46	17
Illinois.....	25,517	406	3.67	18	101	0.91	4
Indiana.....	8,901	100	2.59	11	107	2.77	43
Iowa.....	4,937	182	8.51	42	35	1.64	21
Kansas.....	4,669	84	4.15	23	65	3.21	46
Kentucky.....	6,189	245	9.14	44	53	1.98	32
Louisiana.....	8,231	210	5.89	38	44	1.23	10
Maine.....	2,486	31	2.88	12	25	2.32	35
Maryland.....	15,265	319	4.82	26	108	1.63	20
Massachusetts.....	19,705	186	2.18	4	74	0.87	3
Michigan.....	20,708	312	3.48	17	124	1.38	14
Minnesota.....	9,448	185	4.52	24	43	1.05	6
Mississippi.....	3,413	171	11.56	50	21	1.42	15
Missouri.....	11,501	298	5.98	39	65	1.30	13
Montana.....	1,286	48	8.61	43	19	3.41	47
Nebraska.....	2,746	27	2.27	7	38	3.19	45
Nevada.....	1,740	38	5.04	31	41	5.44	51
New Hampshire.....	2,131	21	2.27	8	17	1.84	28
New Jersey.....	20,084	475	5.46	35	144	1.65	22
New Mexico.....	2,828	25	2.04	2	22	1.80	26
New York.....	56,804	637	2.59	10	247	1.00	5
North Carolina.....	11,944	113	2.18	5	61	1.18	9
North Dakota.....	1,126	53	10.86	47	14	2.87	44
Ohio.....	23,461	549	5.40	34	192	1.89	30
Oklahoma.....	5,614	233	9.58	45	61	2.51	39
Oregon.....	5,844	157	6.20	40	51	2.01	33
Pennsylvania.....	31,406	214	1.57	1	144	1.06	7
Rhode Island.....	2,597	43	3.82	22	13	1.16	8
South Carolina.....	5,498	161	6.76	41	40	1.68	24
South Dakota.....	1,030	17	3.81	21	11	2.46	38
Tennessee.....	9,482	152	3.70	19	62	1.51	18
Texas.....	30,592	685	5.17	32	324	2.44	37
Utah.....	3,071	42	3.16	13	21	1.58	19
Vermont.....	1,435	31	4.99	28	8	1.29	12
Virginia.....	12,344	260	4.86	27	76	1.42	16
Washington.....	10,009	217	5.00	30	109	2.51	40
West Virginia.....	3,372	193	13.21	51	25	1.71	25
Wisconsin.....	9,295	130	3.23	14	73	1.81	27
Wyoming.....	684	14	4.72	25	8	2.70	42
Washington, DC.....	3,671	174	10.94	48	76	4.78	50
U.S. total and mean.....	548,987	9,847	4.14	...	3,935	1.65	...

¹Among States, from the lowest to the highest.

Although the correlation between State physician malpractice payment rates and dental malpractice payment rates is low, there is a strong year-to-year relationship within the physician category. States with high physician malpractice rates in any given year tend strongly to have high rates the next year ($R \geq 0.82$). The same is true for States with low rates. For dentists, correlations from year to year are much lower, presumably because of the smaller number of reports received and apparent random variations from year to year.

A number of other variables that might be related to the variation in physician malpractice payment rates from State to State also were examined. Correlation coefficients were calculated between the malpractice payment rate and State population, the number of physicians per 1,000 population, percent of a State's population living in urban areas, personal income per capita, the number of private practice attorneys, the number of private practice attorneys per 1,000 population, and the ratio of private practice attorneys to physicians. These variables were selected to give a preliminary test to popular beliefs that malpractice claims, or at least payments, are more frequent in big States, urban areas, areas with high incomes and probably greater expectations for health care, and, particularly, areas with a relative abundance of lawyers.

Although the number of physicians in a State is extremely highly correlated to both the population ($R = 0.97$) and the number of private practice attorneys ($R = 0.98$), the correlation between examined variables and malpractice payment rates are small ($R \leq 0.18$) and even negative in some cases. None of the examined variables acting individually explain any substantial proportion of the variation in malpractice payment rates. Further research, probably involving regression analysis to examine the interaction of the variables, is warranted.

The correlation between licensure and clinical privileges adverse actions reported to the Data Bank each year for physicians and reports of malpractice payments made on their behalf was also examined (table 5). Perhaps because the number of adverse actions reports received is relatively small (only about one-fifth the number of malpractice payment reports received), there is much less consistency from year to year in the number of adverse actions reported per 1,000 physicians from each State. The lowest correlation coefficient was $R = 0.58$. In addition, State malpractice payment and adverse actions rates did not strongly correlate from year to year ($R < 0.26$).

Lastly, we examined the relationship between the

various types of reportable adverse actions within the States using cumulative data from the opening of the Data Bank through December 31, 1994 (table 6). Cumulative data were used because of the small number of reports within categories each year from some States. Professional society membership adverse action reports were omitted from the analysis since they are very rare. At the end of 1994, the Data Bank contained only 187 such reports.

Hospitals and other health care entities are generally somewhat more active in taking privileges actions that meet the requirements for reporting than are professional societies. The Data Bank contained 4,160 privileges reports (about 24.5 percent of all adverse actions reports) at the end of 1994. The cumulative average rate of privileges actions per 1,000 physicians ranged from 0.76 in Connecticut, 0.85 in Hawaii, and 0.87 in Massachusetts to 4.07 in Arizona, 4.78 in the District of Columbia, and 5.44 in Nevada. The national rate was 1.65 per 1,000 physicians.

The 12,631 licensure reports made up 74.4 percent of all adverse action reports in the Data Bank at the end of 1994. The cumulative average licensure action rates per 1,000 physicians ranged from a low of 1.57 in Pennsylvania, 2.04 in New Mexico, and 2.08 in Hawaii to highs of 10.94 in the District of Columbia, 11.56 in Mississippi, and 13.21 in West Virginia. The national rate was 4.14 licensure actions per 1,000 physicians.

There is a greater relationship between licensure actions rates and privileges actions rates than there is between malpractice payment rates and rates for adverse actions as a group, but the correlation is still low ($R = 0.33$).

In the "Report from the First Year" (1), we noted a trend toward higher levels of licensing and privileging actions in States with smaller physician populations. For the first year, States with fewer than 10,000 physicians had a mean licensure action rate of 3.7 per 1,000 physicians and a mean privileges action rate of 1.7 per 1,000 physicians. For States with from 10,000 to 19,999 physicians, the first-year mean rates were 2.8 for licensure actions and 1.3 for privileges. For States with 20,000 physicians or more, the first-year mean rates were 2.1 and 1.1.

The correlation coefficient between the number of physicians practicing in a State and the State's licensure action rate is -0.27 . The correlation coefficient between a State's number of physicians and its privileges actions rate is -0.29 . Although these correlations are small, they do support the hypothesis that the small States are more active in licensure and discipline than are the larger States.

Actual cumulative rates through 1994 for States with fewer than 10,000 physicians were 5.58 licensure actions per 1,000 physicians and 2.08 privileges actions per 1,000 physicians. For States with from 10,000 to 20,000 physicians, the rates were 4.20 for licensure actions and 1.52 for privileges actions. For States with more than 20,000 physicians, the rates were 3.47 and 1.51 per 1,000 physicians.

Comment

The Data Bank developed into a mature system over its first 52 months. The number of reports received has apparently stabilized at about 25,000 per year and quite likely represents reasonably full compliance with legal reporting requirements. Startup problems experienced in the Data Bank's first year, such as slow response times, have been eliminated. Significant improvements, such as paperless electronic querying using software and a communications facility provided to queriers without charge by the Data Bank, have been implemented. Similar paperless electronic reporting will be implemented during 1995.

Initial concerns about the burden of reporting and querying, confidentiality, and data security have been proven largely groundless. The usefulness of the Data Bank seems reflected in the fact that many more queries are received, despite the fee for querying, than would be expected if only queries required by law were being made. Indeed, the number of voluntary queries during 1994 was almost as large as the number of required queries. The usefulness of Data Bank information is also confirmed by the demands from some that Data Bank information be made available to the public.

Currently, a major survey of Data Bank reporters and queriers is being conducted to identify how to improve procedures and services and make the Data Bank more useful. This information will prove particularly useful as work continues toward the development and implementation of a more modern

computer processing system and other operational enhancements for the Data Bank that should further improve service and reduce costs.

As the Data Bank continues to collect information and as the nation continues to work toward improving the quality of health care, the Data Bank will become increasingly valuable to State licensing agencies, hospitals, other health care entities, and the medical profession itself.

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